THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A system for detecting a non-video source embedded in a video sequence and providing direction to a deinterlacing algorithm accordingly, said system comprising.
   (a) a signal generator for generating a plurality of signals, said signals being generated in accordance with pixels input from said video sequence;
   (b) a plurality of pattern detection state machines, each for receiving said signals and for detecting a pattern in said video sequence in accordance with a preset threshold, wherein said pattern detection state machine varies said preset threshold in accordance with said signals; and
   (c) an arbiter state machine coupled with said plurality of pattern detection state machines for governing said pattern detection state machines and for determining whether or not a non-video source is embedded in said video sequence.

2. A system as defined in claim 1, wherein if said arbiter state machine detects a non-video source said deinterlacing algorithm ignores redundant fields and deinterlaces said video source by meshing.

3. A system as defined in claim 2, wherein if said arbiter state machine does not detect a non-video source said deinterlacing algorithm deinterlaces said video source using a predetermined deinterlacing algorithm.

4. A system as defined in claim 1, wherein one of said plurality of pattern detection state machines is used for detecting a 3:2 pulldown pattern in the video sequence.

5. A system as defined in claim 1, wherein one of said plurality of pattern detection state machines is used for detecting a 2:2 pulldown pattern in the video sequence.

6. A system as defined in claim 1, wherein one of said plurality of pattern detection state machines is used for detecting a N:M pulldown pattern in the video sequence.

7. A system as defined in claim 6, wherein said N:M pulldown pattern is detected in accordance with a correlation signal defined as

$$Corr(i)=\sum(v(j)\cdot v(j-i)) \text{ for all } j \text{ in } v$$

wherein v is either an alternating or adjacent difference signal.

8. A system as defined in claim 1, wherein a plurality of said signals are motion signals for indicating a measure of motion in a field.

9. A system as defined in claim 8, wherein said motion signals are generated by:
   (a) calculating a difference between a first pixel in a first field and a second pixel in a second field, said second pixel having the same coordinates as said first pixel;
   (b) quantizing said difference against a series of thresholds; and
   (c) determining how many of said quantized differences for each field exceeds a predetermined threshold.

10. A system as defined in claim 9, wherein one of said motion signals is an alternate difference signal for representing motion between said first field and said second field, wherein said fields are sequential fields of the same polarity.

11. A system as defined in claim 9, wherein one of said motion signals is an adjacent difference signal for representing motion between said first field and said second field, wherein said fields are sequential fields of differing polarity.

12. A system as defined in claim 1, wherein one of said signals is a scene signal for indicating whether or not a scene change has occurred in the video sequence.

13. A system as defined in claim 1, wherein one of said signals is a static pattern signal for indicating whether or not a static pattern is present in a portion of said video sequence.

14. A system as defined in claim 13, wherein said static pattern is a subtitle.

15. A system as defined in claim 14, wherein said subtitle is detected by examining a plurality of rows of pixels in a field of said video sequence and determining if a predetermined number of high-low transitions between pixels in a row occurs for a predetermined number of rows.

16. A system as defined is claim 15, wherein a first field is examined for detecting entry of said subtitle and a second field is examined for detecting departure of said subtitle.

17. A system as defined in claim 16, wherein said first field is a current field and said second field is a previous field.

18. A method for detecting a non-video source embedded in a video sequence and providing direction to a deinterlacing algorithm accordingly, said method comprising the steps of:

(a) generating a plurality of signals, said signals being generated in accordance with pixels input from said video sequence;

(b) detecting a pattern in said video sequence in accordance with a preset threshold;

(c) varying said preset threshold in accordance with said signals; and

(d) governing said pattern detection state machines for determining whether or not a non-video source is embedded in said video sequence.

19. A method as defined in claim 18, wherein said pattern is a 3:2 pulldown pattern in the video sequence.

20. A method as defined in claim 18, wherein said pattern is a 2:2 pulldown pattern in the video sequence.

21. A method as defined in claim 18, wherein said pattern is a N:M pulldown pattern in the video sequence.

22. A method as defined in claim 21, wherein said N:M pulldown pattern is detected in accordance with a correlation signal defined as

$$Corr(i)=\sum(v(j)\cdot v(j-i)) \text{ for all } j \text{ in } v$$

wherein v is either an alternating or adjacent difference signal.

23. A method as defined in claim 18, wherein a plurality of said signals are motion signals for indicating a measure of motion in a field.

24. A method as defined in claim 23, wherein said motion signals are generated by:

(d) calculating a difference between a first pixel in a first field and a second pixel in a second field, said second pixel having the same coordinates as said first pixel;

(e) quantizing said difference against a series of thresholds; and

(f) determining how many of said quantized differences for each field exceeds a predetermined threshold.

25. A method as defined in claim 24, wherein one of said motion signals is an alternate difference signal for representing motion between said first field and said second field, wherein said fields are sequential fields of the same polarity.

26. A method as defined in claim 24, wherein one of said motion signals is an adjacent difference signal for representing motion between said first field and said second field, wherein said fields are sequential fields of differing polarity.

27. A method as defined in claim 18, wherein one of said signals is a scene signal for indicating whether or not a scene change has occurred in the video sequence.

28. A method as defined in claim 18, wherein one of said signals is a static pattern signal for indicating whether or not a static pattern is present in a portion of said video sequence.

29. A method as defined in claim 28, wherein said static pattern is a subtitle.

30. A method as defined in claim 29, wherein said subtitle is detected by examining a plurality of rows of pixels in a field of said video sequence and determining if a predetermined number of high-low transitions between pixels in a row occurs for a predetermined number of rows.

31. A method as defined is claim 30, wherein a first field is examined for detecting entry of said subtitle and a second field is examined for detecting departure of said subtitle.

32. A method as defined in claim 31, wherein said first field is a current field and said second field is a previous field.

33. A method for detecting subtitles in a video sequence comprising the steps of:

(a) examining a plurality of rows of pixels in a field of said video sequence;

(b) determining if a predetermined number of high-low transitions has occurred between pixels in a row; and

(c) determining if said predetermined number of high low transitions occurs for a predetermined number of rows.

34. A method as defined is claim 33, wherein a first field is examined for detecting entry of said subtitle and a second field is examined for detecting departure of said subtitle.

35. A method as defined in claim 34, wherein said first field is a current field and said second field is a previous field.

36. A system for detecting subtitles in a video sequence comprising a state machine for examining a plurality of rows of pixels in a field of said video sequence and determining if a predetermined number of high-low transitions has occurred between pixels in a row and determining if said predetermined number of high low transitions occurs for a predetermined number of rows.

37. A system as defined is claim 36, wherein a first field is examined for detecting entry of said subtitle and a second field is examined for detecting departure of said subtitle.

38. A system as defined in claim 37, wherein said first field is a current field and said second field is a previous field.